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A REVISION OF THE AFRICAN SPECIES OF *ZYRAS* STEPHENS (COLEOPTERA : STAPHYLINIDAE) SUBGENUS *PAROPHTHALMONIA* BERNHAUER

By H. R. Last

Manuscript received 28th February, 1958

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With 26 Text-figures

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I. Introduction and Acknowledgments

The subgenus *Parophthalmonia* of *Zyras* Stephens was created by Bernhauer to receive his previously described *kristenseni* and *lomechusinus* and also nine new species (1926, *Arch. Naturg.* **92** : 64). In the same work he divided the African *Zyras* into 27 subgenera in addition to *Creodonia* and *Ctenodonia* previously described by Wasmann, *Glossacantha* described by Gemminger and Harold, and *Myrmoecia* of Mulsant and Rey. Since that time he has described seven more subgenera and an additional one has been described by the present writer, making a total of 39 subgenera for the African species of *Zyras*.

For some unknown reason Bernhauer did not include in his key to the species of *Parophthalmonia* Peringuey's *gravidulus* (1904, *Ann. S. Afr. Mus.* **3** : 214), although there is reason to believe that he saw the type.

Including this species, 22 have been described since the publication of his key, seven by Cameron, two by the present author and 13 by Bernhauer. Some

of these have now been found to be synonyms and others have had to be removed altogether from this subgenus. After examination of types or paratypes of all the species, I have added 18 new species and have had no hesitation in including with these eight based on unique types which are so clearly different from all other species that new names could safely be given.

As far as is at present known, the subgenus is confined to Africa, and some species such as *kristenseni* and *gravidulus* have a very wide range of distribution throughout that Continent. It is characterised by the rather flat broad build, the laterally compressed antennae, the lateral furrows on the seventh tergite of both sexes and the curious developments on the head between the base of the antennae of the males. These structures are much larger than punctures and would appear to fulfil some special function. They are two in number, circular or oval in shape and each has a short tuft of bristle-like setae arising from its cavity. I propose referring to these as " setiferous craters ". They appear constant in size within the species but vary between the species. The size of the " craters " is not correlated with the size of the insect. Their location is also fairly constant within the species, although there are exceptions where the craters are only separated by a little more than their own diameter. Some appear more distinct in having a raised rim round the circumference and this has been mentioned when dealing with the species. Fauvel (1903, *Ark. Zool.* **1** : 243), in describing the first species of this subgenus, writes " . . . the two bristle-bearing pores of the male's brow are new and remarkable characteristics " (fig. 1).

Type species of the subgenus : *Zyras* (*Parophthalmonia*) *kristenseni* designated by Bernhauer.

After examination of types or paratypes the following synonymy must be established.

gravidulus Peringuey, 1904, *Ann. S. Afr. Mus.* **3** : 214.
lomechusinus Bernhauer, 1915, *Ann. hist-nat. Mus. hung.* **13** : 173.
dollmani Cameron, 1919, *Ent. Rec.* **31** : 84, **syn. n.**

diversicollis Bernhauer, 1926, *Arch. Naturg.* **92** : 62.
mabiranus Cameron, 1952, *E. Afr. nat. Hist. J.* **20** : 455, **syn. n.**

Anophthalmodonia jordani Bernhauer, 1936, *Novit. Zool.* **39** : 266.
acanthonioides Bernhauer, 1943, *Rev. Zool.-Bot. afr.* **37** : 304, **syn. n.**; **comb. n.**

songeanus Bernhauer, 1947, *Ann. naturh.* (*Mus.*) *Hofmus. Wien.* **55** : 162, must be removed to the subgenus *Anophthalmodonia*, **comb. n.**

The following three species must be removed to the subgenus *Acanthocnemedonia*.

congoensis Bernhauer, 1915, *Dtsch. Zent. Afr. Exped.* : 366.
manowensis Bernhauer, 1930, *Wien. ent. Ztg.* **47** : 147.
kafakumbanus Bernhauer, 1935, *Rev. Zool. Bot. afr.* **27** : 104, **comb. n.**

After examining further material, which included male specimens, I find the following species must be removed from the subgenus *Parophthalmonia* as the males do not possess the setiferous craters on the head :

marukana Cameron, 1933, *Bull.* (*Ann.*) *Soc. ent. Belg.* **73** : 52.
peculiaris Cameron, 1952, *E. Afr. nat. Hist. J.* **20** : 455.
forus Last 1956, *Ann. Mus. Congo belge, Tervuren* (*Zool.*) **51** : 206.
planatus Last, *loc. cit.* : 208.

A new subgenus has been created to receive these and will be described later.

The subgenus can be separated into two distinct divisions, as shown in Bernhauer's key, by the shape of the posterior corners of the pronotum. The first section has these corners much rounded (in a few species the lateral and posterior margins join continuously and the posterior corners are indistinguishable) ; in the second section they are clearly acute or " acutely rounded " (in some the corners have a conspicuous small notch or tooth). The species of the first section are all very similar and the differences therefore almost entirely closely comparative. They are all of a paler or darker yellow and are lighter in colour than most species of the second section.

The second section shows more marked differences especially in the shape of the pronotum and its depressions, the microsculpture of the pronotum and elytra, and the length of the antennal segments. The male genitalia have not been found to be of much value in determination of species, but where distinctions are evident camera lucida drawings have been made. The secondary sexual characters of species in the first section of the key (numbers 1 to 12) are all very similar, but in the second section (numbers 13 to 39) the formation of the eighth tergite shows more diversity.

The comparative measurements given for new species were made with a squared eye-piece ; the measurements of the head have been taken from the base of the first segment of the antenna where this joins the head.

In descriptions and comments upon previously described species more consideration has been given to certain characters than was done in their original descriptions, *i.e.* the lateral and posterior " bevelling " of the pronotum, the setiferous craters on the head of the male and the varying forms of microsculpture of pronotum and elytra. Outline drawings of the pronotum of several species have been made, which it is hoped will assist identification. An oblique light is necessary to appreciate granulation and microsculpture. It is necessary to have the pronotum flat to see a correct contour.

I record my gratitude to Dr. A. J. Hesse (South African Museum), Prof. P. Basilewsky (Musée Royal du Congo Belge), Dr. G. Fagel (Institut Royal des Sciences Naturelles de Belgique), Mr. R. Wenzel (Chicago Natural History Museum), Mons. A. Villiers (Institut Français D'Afrique Noire), Mons. Le President V. Van Straelen (Institut des Parcs Nationaux du Congo Belge), Sig. Marcello Cerruti (Rome), and the Rev. C. E. Tottenham (Cambridge) who have kindly lent types or paratypes or who have allowed me to examine specimens from their collections. I should also like to thank Mr. E. B. Britton for facilities given for the study of material in the collections of the British Museum (Natural History) and for many helpful suggestions.

II. Alphabetical List of Species

	Species No.		Species No.
acuticollis Bernhauer	14	*icetus* sp. n.	40
altus sp. n.	5	*impurus* sp. n.	26
arrowi Bernhauer	18	*infulatus* sp. n.	24
bidens Cameron	4	var. *uniformis*	25
bidenticulatus Bernhauer	31	*ingratus* sp. n.	34
boormani sp. n.	35	*jansei* sp. n.	10
burgeoni Bernhauer	6	*kristenseni* Bernhauer	36
concisus sp. n.	39	*leptocerus* sp. n.	13
confusorius sp. n.	1	*matengoensis* Bernhauer	19
corniger Bernhauer	16	*misellus* sp. n.	17
dentiventris Bernhauer	30	*notatus* sp. n.	9
diversicollis Bernhauer	3	*opacus* Bernhauer	23
diversicornis sp. n.	12	*punctiventris* Bernhauer	28
donisthorpei Cameron	37	*retusus* sp. n.	7
elgonensis sp. n.	32	*rotundicollis* Cameron	2
gestroianus Bernhauer and Scheerpeltz	27	*semiopacus* Bernhauer	22
gravidulus Peringuey	8	*sobrinus* sp. n.	38
gregoryi sp. n.	20	*sulcicollis* Fauvel	15
harpurus sp. n.	33	*uelensis* Bernhauer	21
holtzi Bernhauer	11	*zernyi* Bernhauer	29

III. Key to the African Species of *Zyras* Stephens Subgenus *Parophthalmonia* Bernhauer

1 Pronotum with posterior corners rounded 2
– Pronotum with posterior corners obtuse or obtusely rounded . . . 13
2 Pronotum with lateral margins strongly rounded, posterior margin rounded, anterior margin almost straight 3
– Pronotum with lateral margins only moderately rounded 4
3 Elytra finely punctured; pubescence short . . . (1) **confusorius** sp. n.
– Elytra less finely punctured, pubescence longer, more shining (2) **rotundicollis** Cameron
4 Pronotum with posterior margin rounded, anterior margin arcuate almost parallel with posterior margin, with conspicuous black setae at anterior corners and sparingly along lateral margins (3) **diversicollis** Bernhauer
– Pronotum with anterior margin straighter, not nearly parallel with posterior margin, without conspicuous black setae 5
5 Puncturation of elytra inclined to be granular 6
– Puncturation of elytra asperate 9
– Puncturation of elytra fine, not asperate 11
6 Pronotum sparsely granular, elytra coarsely granular 7
– Pronotum not granular, elytra finely granular 8
7 Antennae more robust, less laterally compressed (fig. 2*a*) (4) **bidens** Cameron
– Antennae less robust, more laterally compressed (fig. 2*b*) (5) **altus** sp. n.
8 Pronotum and elytra shining, antennal segments 5–10 elongate (6) **burgeoni** Bernhauer

8 Pronotum and elytra less shining, antennal segments 5–10 quadrate or transverse . . . . . (7) **retusus** sp. n.
9 Puncturation of elytra coarsely asperate, tergites sparsely setiferously punctured on apical margins . . . . (8) **gravidulus** Peringuey
– Puncturation of elytra very finely asperate 10
10 Tergites sparsely setiferously punctured . . . . (9) **notatus** sp. n.
— Tergites very finely punctured and pubescent throughout (10) **jansei** sp. n.
11 Species smaller (7–8 mm.); antennae short, much compressed laterally; tergites almost impunctate . . . (11) **holtzi** Bernhauer
— Species a little larger (8–9 mm.) 12
12 Antennae more robust; tergites finely and sparsely pubescent (12) **diversicornis** sp. n.
— Antennae less robust, shorter, segments 4–10 transverse, inclined to be serrate; pubescence of elytra and tergites regular and short throughout . . . . . (13) **leptocerus** sp. n.
13 Pronotum without microsculpture on disc 14
— Pronotum with distinct microsculpture on disc 17
14 Pronotum with lateral margins sinuate before posterior corners (14) **acuticollis** Bernhauer
— Pronotum with lateral margins not sinuate before posterior corners . 15
15 Pronotum with lateral margins less rounded 16
— Pronotum with lateral margins more rounded, posterior corners forming a small tooth . . . . . (15) **sulcicollis** Fauvel
16 Pronotum with posterior corners not sharp, not toothed (16) **corniger** Bernhauer
— Pronotum with posterior corners sharp, sometimes forming a small tooth . . . . . (17) **misellus** sp. n.
17 Pronotum with signs of granulation 18
— Pronotum without signs of granulation 22
18 Pronotum with lateral depressions broad and distinct, lateral margins slightly reflexed 19
— Pronotum without or with weaker lateral depressions, lateral margins not reflexed . . . . . (22) **semiopacus** Bernhauer
19 Elytra with distinct elongate granulation . . . (18) **arrowi** Bernhauer
— Elytra without distinct elongate granulation 20
20 Elytra with dense granulation not appreciably elongate (19) **matengoensis** Bernhauer
— Elytra not granulate, densely asperately punctured 21
21 Size larger (12–13 mm.), pronotum weakly reticulate (20) **gregoryi** sp. n. ♂
— Size smaller (9–10 mm.), pronotum strongly reticulate (21) **uelensis** Bernhauer ♂
22 Microsculpture of pronotum very finely reticulate (longitudinally reticulate in *ingratus* sp. n. ♀) 23
— Microsculpture of pronotum alutaceous, not reticulate, sometimes confused (almost reticulate in *concisus* sp. n. ♂) 36
23 Entirely black, except legs and antennae . . . (23) **opacus** Bernhauer
— Not entirely black 24
24 Head black, pronotum black, laterally broadly yellowish-red (24) **infulatus** sp. n.
(Head and pronotum completely black. . . (25) var. *uniformis* var. nov.)
— Head and pronotum not black 25
25 Smaller species (5·5–7 mm.), more convex, more parallel 26

25 Larger species (8–13 mm.), less convex, less parallel 30
26 Pronotum with impunctate median band, elytra diffusely punctured (26) **impurus** sp. n.
— Pronotum without impunctate median band, elytra not diffusely punctured 27
27 Pronotum less convex, lateral depressions more broadly distinct, microsculpture of tergites transverse reticulate 28
— Pronotum more convex, lateral depressions less broadly distinct, microsculpture of tergites more alutaceous 29
28 Pronotum broader (7 : 4·25), less convex, more broadly depressed at the sides . . . . . (27) **gestroianus** Bernhauer and Scheerpeltz
— Pronotum narrower (5·5 : 4), more convex, less broadly depressed at the sides . . . . . (28) **punctiventris** Bernhauer
29 Larger (7 mm.), elytra longer (6·5 mm.), not shining (29) **zernyi** Bernhauer
— Smaller (5·5–6 mm.), elytra shorter (5 mm.), moderately shining (30) **dentiventris** Bernhauer
30 Pronotum laterally broadly depressed 31
— Pronotum laterally not or less broadly depressed 33
31 Elytra diffusely granular, colour lighter . . (31) **bidenticulatus** Bernhauer
— Elytra not diffusely granular, densely asperately punctured ; colour darker 32
32 Size larger (12–13 mm.) ; pronotum more densely punctured with weak reticulate microsculpture . . . . . (20) **gregoryi** sp. n. ♀
— Size smaller (9–10 mm.) ; pronotum less densely punctured, strongly reticulate (21) **uelensis** Bernhauer ♀
33 Pronotum with posterior corners distinctly toothed 34
— Pronotum with posterior corners not distinctly toothed 35
34 Pronotum with 2 elongate central depressions . . (32) **elgonensis** sp. n.
— Pronotum without 2 elongate central depressions . (33) **harpurus** sp. n.
35 Species large (8–9 mm.) , tergites shining, with scanty pubescence (34) **ingratus** sp. n.
— Species smaller (7 mm.) ; tergites less shining with pubescence fine and even throughout . . . . . (35) **boormani** sp. n.
36 Pronotum more densely punctured 37
— Pronotum diffusely and finely punctured 39
37 Pronotum and elytra with fine pubescence 38
— Pronotum with short setae . . . . . (38) **sobrinus** sp. n.
38 Abdomen punctured and pubescent . . (36) **kristenseni** Bernhauer
— Abdomen almost impunctate and glabrous . (37) **donisthorpei** Cameron
39 Head larger (5·75 : 3) ; red ; second and third segments of antennae of almost equal length . . . . . (39) **concisus** sp. n.
— Head smaller (5·5 : 2·5) ; black ; second segment of antennae considerably shorter than third . . . . . (40) **icetus** sp. n.

IV. Descriptions of and Notes on the Species

1. Zyras (Parophthalmonia) confusorius sp. n.

Very similar in shape of pronotum to *rotundicollis* Cam., differing only in puncturation of elytra, which is denser, and shorter pubescence ; the pronotum is more laterally rounded (fig. 5).

Length 8 mm.

Type ♀, Congo Belge : Maniema Kisamba, iii.1955 (*Dr. Claessens*) ; paratype ♀, N. Sankusu Lomela, 1955 (*Hanotier*) in the Musée Royal du Congo Belge.

2. *Zyras* (*Parophthalmonia*) *rotundicollis* Cameron

Cameron, 1952, *E. Afr. nat. Hist. J.* **20** : 454.

Elytra more shining than in its near relatives because of the weak microsculpture ; antennae with segments narrow and elongate, the last segment being equal to the 2 penultimate. Pronotum figure 6.

I have seen only two specimens, both females.

Type ♀, Uganda : Bwamba, vii–viii.1946 (*V. G. L. van Someren*) in the British Museum (Nat. Hist.). Congo Belge : Urindi, Rugari, 1948 (*Dames de Marie*) in the Musée Royal du Congo Belge.

3. *Zyras* (*Parophthalmonia*) *diversicollis* Bernhauer

Bernhauer, 1926, *Arch. Naturg.* **92** : 62.

The shape of the pronotum and the curled setae are useful distinguishing characters for this species.

Craters on head slightly rimmed and not large. Lateral margins of pronotum moderately rounded and hardly perceptibly bordered along posterior third (fig. 7) ; anterior margin concavely rounded so that it is more parallel with posterior margin ; anterior corners and lateral margins with conspicuous black curled setae. Third tergite in male slightly centrally laminate ; eighth tergite irregularly dentate with a central dorsal tooth.

Type ♂, Congo Belge : Haut Uele, Moto, xi.1920 (*L. Burgeon*) ; Uele, Kumu, 6.iii.1938 (*J. Vrydagh*) ; Kamamega, xi.1932 (*A. F. J. Gedye*) (labelled "*diversicornis*" by Bernhauer) in the Chicago Natural History Museum.

Also from Congo Belge, 18 m. SW. of Elisabethville, 1927 (*Dr. H. S. Evans*) in the British Museum (Nat. Hist.). Same locality (*Ch. Seydel*) and Uele Nepoko, Parva, 12.viii.1930 (*Dr. P. Gerard*) in the Musée Royal du Congo Belge. French West Africa : Dahomey, Koussokoingou (Atakora 600–700 m.), 12–20.vi.1950 (*A. Villiers*) in the Institut Français D'Afrique Noire, Dakar.

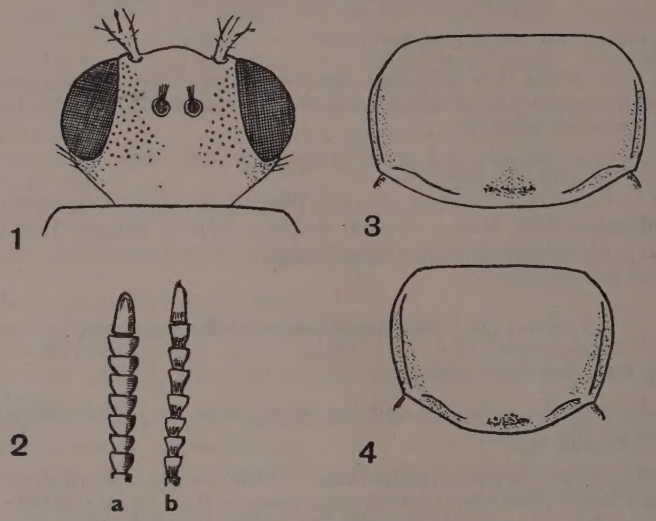
In his description of *mabiranus* Cameron compares this species with a specimen in the British Museum labelled by Bernhauer "*diversicollis*". This specimen is, in fact, *holtzi* Bernhauer, and on comparing Cameron's type *mabiranus* with Bernhauer's type *diversicollis* I find them to be conspecific ; *mabiranus* is, therefore, a synonym of *diversicollis*.

4. *Zyras* (*Parophthalmonia*) *bidens* Cameron

Cameron, 1952, *Bull. Inst. Franç. Afr. N.* **14** : 835.

This species could perhaps be placed in the second section of the key as the posterior corners of the pronotum are more evident than in other species (fig 8). Cameron compares it with *bidenticulatus* Bernh., but it is much larger than that species. It comes perhaps nearest to *sobrinus* sp. n.

Craters on head strongly rimmed; both pronotum and elytra inclined to granulate. Antennal segments short and much less laterally compressed than in most other species. Third tergite of male with 2 sharp triangular teeth, feebly emarginate between; eighth with a central dorsal tooth and the apical edge irregularly crenulate.



FIGS. 1–4.—*Zyras* (*Parophthalmonia*). (1) Head of *kristenseni* Bernhauer. (2) Antennae of (a) *bidens* Cameron, (b) *altus* sp. n. (3–4) Pronotum of (3) *gestroianus* Bernhauer and Sheerpeltz, (4) *punctiventris* Bernhauer.

Type ♂, FRENCH WEST AFRICA: Dahomey, Koussokoingou (Atakora 600–700 m.), 12–21.vi.1950 (*A. Villiers*) in the Institut Français D'Afrique Noire, Dakar. Paratype, same data, in the British Museum (Nat. Hist.).

5. **Zyras (Parophthalmonia) altus** sp. n.

Similar to *bidens* Cam:, but the antennae are quite different in having the segments longer than broad and strongly laterally compressed as in most other species of the subgenus. The pronotum is not so transverse, the lateral depressions are deeper and the elytra are more sparingly punctured.

Reddish-yellow, head black except fore part.

Head transverse (5·25 : 2·5), finely reticulate and sparingly punctured near the eyes; in the female with a distinct longitudinal depression on vertex and a triangular protuberance between the antennae, setae present at base and temples. Eyes large, very convex, their longitudinal diameter 4 times length of temples. Antennae not long, first segment slightly broadened and emarginate at apex, second one-third length of first, third segment twice length of second, fourth to tenth equal, a little shorter than third, last segment slightly longer than penultimate; all segments finely setose, longer than broad, broader at apex.

Pronotum transverse (7 : 5), broadest at anterior third, laterally strongly depressed; finely denticulate, very sparingly granulate, sparingly setose; anterior corners distinct, posterior corners rounded but evident, posterior margin shorter than anterior, a large shallow depression opposite scutellum, all margins very narrowly bordered.

Elytra transverse, (7 : 6) at shoulders (8 : 6) at posterior margin ; granularly punctured, reticulation a little less fine than on pronotum, sparingly setose. Postero-external angles weakly sinuate ; posterior margin finely, sutural margin more broadly bordered, sutural angles deflexed.

Abdomen diffusely granular, sparingly setose, paratergites more densely setose, transversely reticulate. Female with eighth tergite finely crenulate. Legs long, setose, tibiae laterally compressed.

Length 8 mm.

Type ♀, NIGERIA : Zaria Province, Rigachi Kun, 27.vii.1945 (*P. Roche*) in my own collection.

6. *Zyras* (*Parophthalmonia*) *burgeoni* Bernhauer

Bernhauer, 1926, *Arch. Naturg.* **92** : 61.

Antennae similar to those of *rotundicollis* Cam., the last segment very long, fractionally longer than 2 penultimate together. Setiferous craters on head hardly rimmed, twice the distance of their diameter apart. Lateral depressions of pronotum broad and flat, and lateral margins extremely narrowly bordered. Pronotum and elytra finely reticulate, shining. Elytra diffusely asperately punctured with short suberect setae ; tergites granularly punctured at apical edge. Eighth tergite of male irregularly denticulate, with a small central dorsal tooth.

Type ♂, CONGO BELGE : Haut-Uele, Watsa, xi.1919 (*L. Burgeon*) ; paratype ♀, Tshuana, Flandrea, viii–ix.1947 (*Rev. P. Hulstaert*) in the Musée Royal du Congo Belge. Also Haut-Uele, Moto, ii–iii.1923 (*L. Burgeon*), bearing a Bernhauer label " *diversicollis* Bernh.", in the Chicago Natural History Museum.

7. **Zyras (Parophthalmonia) retusus** sp. n.

The elytra are more finely and more densely granularly punctured than in *bidens* Cam.

Similar to *burgeoni* Bernh. but less shining, the microsculpture stronger. Elytra a little more densely punctured, the pronotum broader, antennal segments slightly more robust and quadrate or transverse. Setiferous craters on head distinctly rimmed, about 3 times width of their diameter apart. Pronotum very finely reticulate, more so than elytra. Male with 2 triangular teeth at apical edge of third tergite ; eighth tergite with a central dorsal tooth and a number of granules ; apical edge irregularly dentate.

Length 8 mm.

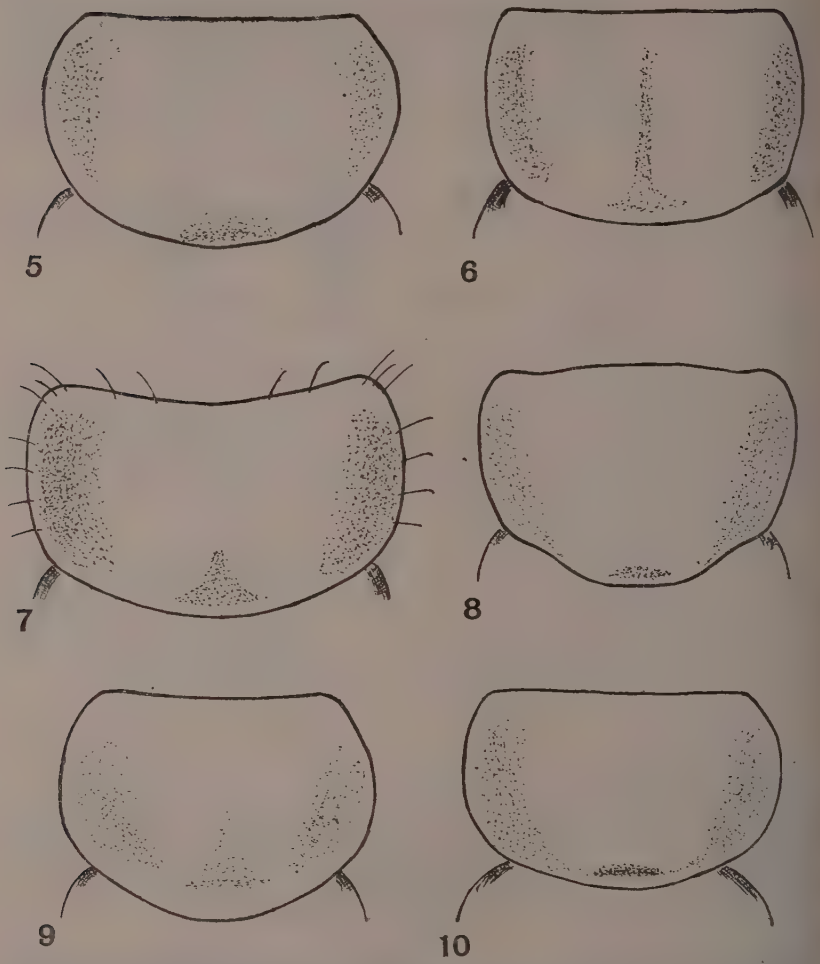
Type ♂, FRENCH WEST AFRICA : Dahomey, Koussoukoingou (Atakora 600–700), 12–20.vi.1950 (*A. Villiers*) unique, in the Institut Français D'Afrique Noire, Dakar.

8. *Zyras* (*Parophthalmonia*) *gravidulus* Peringuey

Peringuey, 1904, *Ann. S. Afr. Mus.* **3** : 214.

Described as a *Myrmedonia*. Pronotum very narrowly bordered, reticulation much finer than that of elytra ; elytra very coarsely asperately punctured, densely reticulate, postero-external angles not or barely sinuate. *Z.* (*P.*) *lomechusinus* Bernhauer, and *dollmani* Cameron are conspecific. Pronotum figure 9.

Type ♀, S. RHODESIA : Sebakwe ; also a specimen from TRANSVAAL : Florida, xii.1918 (*R. W. Tucker*) in the South African Museum. CONGO BELGE : Kaciri,



Figs. 5–10.—*Zyras* (*Parophthalmonia*). Pronotum of (5) *confusorius* sp. n., (6) *rotundicollis* Cameron, (7) *diversicollis* Bernhauer, (8) *bidens* Cameron, (9) *gravidulus* Peringuey, (10) *jansei* sp. n.

ix.1922 (*Miss. Agric.*) in the Musée Royal du Congo Belge. Abyssinia (Fauvel Collection) Musée Royal d'Histoire Naturelle de Belgique. N. Rhodesia: Congo-Zambezi watershed, 1928 (*Dr. H. S. Evans*). Cape Province: Mossel Bay, 15.iii–20.iv.1932 (*R. E. Turner*) in the British Museum (Nat. Hist.).

9. **Zyras (Parophthalmonia) notatus** sp. n.

This species is so very similar to *jansei* sp. n. as to make a detailed description unnecessary.

Differences from *jansei* are in the antennae which have all the segments considerably shorter and broader ; pronotum flatter with evident depressions ; lateral margins broadly depressed and distinctly reflexed, a little more coarsely punctured and posterior angles more evident ; abdomen more shining and without the fine pubescence of *jansei* sp. n. ; puncturation and pubescence of elytra identical in both species.

Length 7 mm.

Type ♂, Congo Belge : " de Coquilhatville à Ruamouth " (*St. J. Ghesquière*) ; paratype ♂, " de Luebo à Luluabourg, 1921 " (*St. J. Ghesquière*) in the Musée Royal du Congo Belge.

10. **Zyras (Parophthalmonia) jansei** sp. n.

This species is very similar to *gravidulus* Per., but it is of a narrower and more slender build. The antennal segments are longer, especially 4–6 ; the last appears to be shorter than in *gravidulus* ; all segments are less broadened at the apex, *i.e.* not so cup-shaped. The pronotum is more rounded at the sides, and the pubescence shorter (fig. 10). The elytral pubescence is a little shorter and finer, more finely asperately punctured. The abdomen is more finely and more closely pubescent and less shining (the abdominal characters are very reliable). Secondary male characters show the third tergite simple, and the eighth broadly rounded and not serrate, with a central tooth, fine pubescence and dull, whereas secondary male characters of *gravidulus* show the third tergite with 2 short teeth on the apical edge, the fourth with a central tooth, and the eighth tergite irregularly serrate on the apical edge, with a central tooth at the apical third and shining. Both species have lateral furrows on the eighth tergite as well as those on the seventh.

Dull yellow except head and apical tergites which are darker.

Head transverse (6 : 3), impunctate except for a few indistinct punctures near inner margin of eyes, strongly but finely reticulate ; eyes convex, their longitudinal diameter twice length of temples ; setiferous craters distinctly rimmed. Antennae long with all segments longer than broad ; first segment gradually broadened and emarginate at apex ; second two-thirds length of first ; third a little longer than second but shorter than first ; fourth equal to second ; segments 5–7 equal, half length of first ; 8–10 a little shorter than preceding, last segment a little shorter than 2 penultimate. Laterally compressed from third segment, finely setose. Maxillary palpi long.

Pronotum transverse (8 : 5), distinctly reticulate with fine short pubescence, asperately punctured on lateral margins which are broadly depressed ; broadest at middle, posterior corners completely rounded with posterior margin ; anterior corners rounded but much more evident ; anterior margin straight, all margins very narrowly bordered.

Elytra transverse (8 : 7) at shoulders as broad as pronotum, (10·5 : 7) at posterior margin ; very finely asperately punctured and extremely finely reticulate, pubescence fine, short and dense. Postero-external angles sinuate, sutural and posterior margins narrowly bordered.

Abdomen finely and asperately punctured with fine short pubescence and fine reticulation. Seventh tergite with usual lateral furrows ; eighth tergite in male broadly and bluntly rounded, with 2 lateral furrows. Legs long, slender, setose.

Length 10 mm.

Type ♂, Transvaal : Pretoria, 6.xii.1907 (*A. J. T. Janse*) ; paratype ♀, Florida, xii.1918 (*R. W. Tucker*), both in the South African Museum.

Paratypes, " Cap B Esp ", Fauvel Collection in the Institut Royal des Sciences Naturelles de Belgique. Paratypes also from Transvaal : Pieters-

burg, 26.xii.52 (*C. G. C. Dickson*); Johannesburg, Bedford View, 30.i.1955 (*A. L. Capener*) in the author's collection. Also Cape Province: Grahamstown, 12.v.1942 (*S. Bennie*); Spring-fontein, iv.1948 (*Jackson*) in the collection of C. E. Tottenham; and Port St. John, 15–31.v.1923 (*R. E. Turner*) in the British Museum (Nat. Hist.).

11. *Zyras* (*Parophthalmonia*) *holtzi* Bernhauer

Bernhauer, 1926, *Arch. Naturg.* **92** : 62.

Craters on head broadly rimmed; antennal segments much compressed laterally; abdomen almost impunctate and glabrous. Puncturation of elytra similar to *jansei* sp.n. but that of abdomen quite different.

Type ♂, Tanganyika: Tabora, 2.i.1916 (*Holtz*); paratype, same data; Congo Belge: 18 m. SW. Elisabethville, 1927 (*Dr. H. S. Evans*) in the Chicago Natural History Museum. Tanganyika: Morogoro, 13.i.25 (*A. H. Ritchie*) in the British Museum (Nat. Hist.); Mpala, xi.1953 (*H. Bomans*); Southern Rhodesia: Salisbury, ii–iii.1956 (*H. C. Brayne*) in the collection of the Rev. C. E. Tottenham.

12. **Zyras** (**Parophthalmonia**) **diversicornis** sp. n. (Bernhauer *i.l.*)

This species is so like *diversicollis* Bernh., that only the differences need be mentioned.

Pronotum not so rounded laterally, the posterior corners discernible, the anterior margin almost straight, and all margins narrowly but distinctly bordered. Second segment of antennae two-thirds length of third; in *diversicollis* it is shorter, being only half the length of third.

Length 7–8 mm.

Type ♀, Kenya: Kaimosi, iii–iv.1932 (*A. Turner*); paratypes, Angola: Dundo, iii.1948 (*A. de B. Machado*) in the British Museum (Nat. Hist.). Congo Belge: Musosa, ix.1939 (*H. J. Brédo*); Congo Française: Ht. Sango. in the Musée Royal D'Histoire Naturelle de Belgique. Congo Belge: May-Yo-Moto (950 m.), 5–10.ix.1934 (*G. F. de Witte*); same locality (*V. Rutsh*); (950 m.), 5–12.xi.1934 (*G. F. de Witte*) in the Institut des Parcs Nationaux du Congo Belge; R. Lupiala (850 m.), 24.x.1947 (*G. F. de Witte*).

I am retaining the label-name given by Bernhauer for this species.

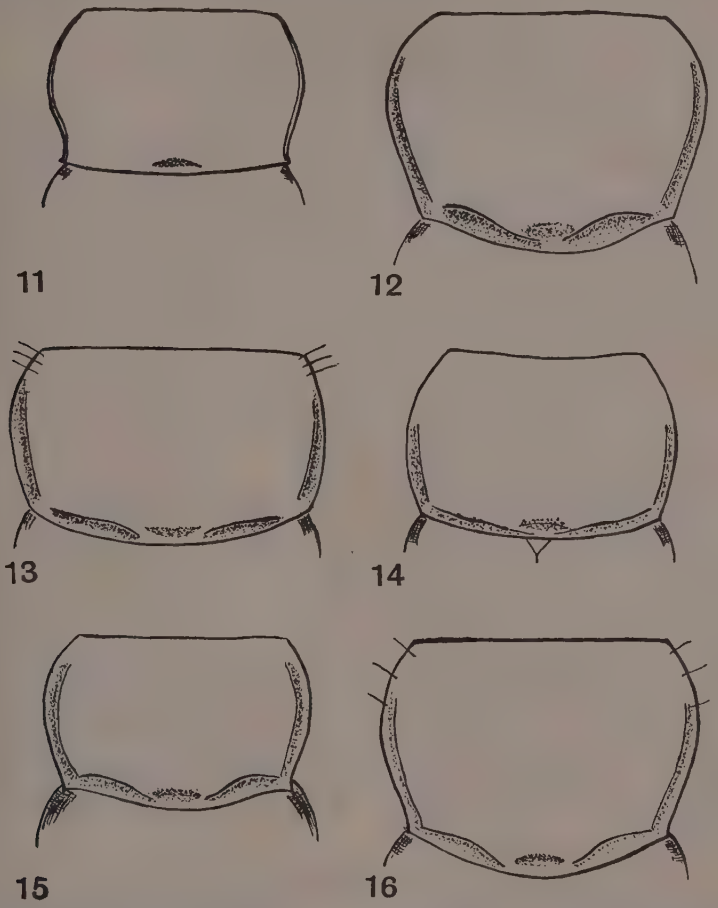
13. **Zyras** (**Parophthalmonia**) **leptocerus** sp. n.

In the formation of the antennae the species is similar to *holtzi* Bernh., but it is larger, similar to *diversicornis* sp. n., and the tergites have regular short pubescence throughout.

Dull yellow, head black, tergites darkened.

Head transverse (6 : 3), shining, very faintly and sparingly punctured, microsculpture visible; eyes large convex, extending almost the length of the head, a few black setae from base and front margin of eyes. Antennae with first segment broadened and emarginate at apex; second segment half length of first; third a little longer than second but shorter than first; segments 4–10 transverse, each segment broader at the apex, rather inclined to be serrate; last segment equal to 2 penultimate, bluntly rounded; laterally only moderately compressed, all segments with short black setae conspicuous at apical edges. Maxillary palpi sparingly setose.

Pronotum transverse (8 : 5), broader than head, laterally evenly rounded ; anterior margin straight, posterior margin very slightly sinuate with angles rounded but distinct, anterior angles less rounded ; laterally weakly depressed, very finely and sparingly punctured, with fine alutaceous-sculpture, all margins narrowly bordered, a broad shallow depression opposite scutellum, setae sparse and short.



Figs. 11–16.—*Zyras* (*Parophthalmonia*). Pronotum of (11) *acuticollis* Bernhauer, (12) *sulcicollis* Fauvel, (13) *corniger* Bernhauer, (14) *misellus* sp. n., (15) *arrowi* Bernhauer, (16) *matengoensis* Bernhauer.

Elytra transverse (8 : 6·5) at shoulders, a little broader at posterior margins, densely and rather asperately punctured, without microsculpture on interstices ; setae very short ; postero-external angles slightly sinuate, suture and posterior margin narrowly bordered.

Abdomen finely and sparingly punctured, tergites and paratergites with short yellow setae, transverse microsculpture distinct. Sixth tergite in female broadly depressed,

seventh with lateral furrows, eighth also with lateral furrows, rounded apically, indistinctly dentate. Legs long, setose, with apex of tibiae narrower.

Length 8–9 mm.

Type ♀, Congo Belge : Lualaba, Kabongo, at light, xi.1953 (*Ch. Seydel*) ; paratype ♀, same data, in the Musée Royal du Congo Belge. French Guinea : Kindia, ♂, 12.iv.1954 (*A. Villiers*) in the Institut Français D'Afrique Noire.

14. *Zyras* (*Parophthalmonia*) *acuticollis* Bernhauer

Bernhauer, 1937*b*, *Rev. Zool.-Bot. afr.* **30** : 301.

Clearly distinct from all other species in its very shining appearance, extremely fine and diffuse puncturation of elytra and pronotum, complete absence of ground-sculpture, and the sinuate lateral margins of the pronotum (fig. 11). Male with rimmed setiferous craters which are closely situated, less than twice their diameter apart. Median lobe figure 22.

Type ♂, Congo Belge : Mahagi-Niarembe, 1935 (*Ch. Scops*) in the Chicago Natural History Museum. I have seen specimens from Congo Belge : Elisabethville (*Ch. Seydel*) in the Musée Royal du Congo Belge ; Nigeria : Ibadan (*V. F. Eastop*) in the collection of C. E. Tottenham ; and from the same locality (*J. L. Gregory*) in my own collection.

15. *Zyras* (*Parophthalmonia*) *sulcicollis* Fauvel

Fauvel, 1903, *Ark. Zool.* **1** : 243.

It is in his description of this species that Fauvel first draws attention to the " bristle bearing pores " of the head of the male and it was the first species of the subgenus to be described.

A large species, very shining, and in some respects like *uelensis* but cannot be confused with this species. Setiferous craters of the head large and rimmed and twice their diameter apart. Pronotum figure 12.

I have seen a ♂ syntype from the French Cameroons (Libreville, Loango) : Gabon, and several specimens from the Congo Belge : Yangombi, Reserve Forestière (*J. K. A. van Boven*) in the Institut Royal des Sciences Naturelles de Belgique ; from Kivu, Kalche (1050 m.), Bunyakari and Masisi (800 m.), Mutakato (*N. Leleup*) in the Musée Royal du Congo Belge ; from Uganda : Budonga Forest, Unyoro, 3400 feet, ♀ (*S. A. Neave*) in the British Museum (Nat. Hist.).

16. *Zyras* (*Parophthalmonia*) *corniger* Bernhauer

Bernhauer, 1927, *Mem. Soc. ent. Ital.* **6** : 199.

Bernhauer compares this species with *kristenseni*. The obvious differences are :

Head and pronotum shining and without microsculpture, elytra with only very indistinct microsculpture on the interstices. Pronotum figure 13. Apical edge of the third tergite in the male furnished with 2 strong " teeth ", centre of the fourth tergite flattened and laminate, fifth tergite with 2 raised callosities and a number of granules near apical edge which are also present on sixth and seventh tergites, eighth tergite with a large thickened lamina ; apical edge of seventh tergite deeply sinuate in the centre. Paratergites of third tergite extend to form two sharp " prongs ".

I have seen paratypes ♂ and ♀, from PORTUGUESE GUINEA : Boloma, vi–xii.1899 (*L. Fea*) in the Chicago Natural History Museum, and a paratype ♂, same data, and a ♀ specimen from FRENCH WEST AFRICA : Bassila, Dahomey (*A. Villiers*) in the Cameron Collection at the British Museum (Nat. Hist.).

17. **Zyras (Parophthalmonia) misellus** sp. n.

The granular puncturation of the elytra is very similar to *concisus* sp. n. ; the general appearance is similar to *boormani* sp. n. but the antennae are shorter, the segments lacking the conspicuous apical setae of that species ; the pronotum is also without microsculpture, more shining, and the posterior corners have small teeth which are absent in *boormani* (fig. 14).

Reddish-brown, tergites darker, head black, rather parallel in form.

Head transverse (5·25 : 3), eyes large convex, their longitudinal diameter twice the length of the temples, longitudinally reticulate, sparingly punctured near the eyes, setiferous craters large, distinctly rimmed, the distance between them equal to their diameter. First segment of antennae broadened and emarginate at apex ; second and third segments equal, one-third shorter than first ; third segment one-third shorter than the two preceding ; segments 4–9 equal, slightly shorter than third ; segment 10 slightly shorter than ninth ; last segment slightly longer than penultimate, bluntly acuminate at apex ; all segments considerably broader at apex, sparingly setose. Mouthparts yellowish.

Pronotum transverse (7 : 4), broader than head, laterally moderately rounded, broadest a little below the middle. Posterior margin rather broadly bevelled, lateral margins more narrowly bevelled for posterior two-thirds ; posterior corners with distinct small tooth. Shining, without microsculpture except very faintly near lateral margins ; diffusely punctured, more closely laterally where it is slightly depressed, all margins distinctly bordered; sparingly pubescent.

Elytra transverse (7 : 5·25) at shoulders, broader at posterior margin which is distinctly sinuate at postero-external angles. Shining, densely punctured, inclined to granular with very indistinct microsculpture, pubescence very short. Scutellum glabrous, without microsculpture.

Hind body finely asperately punctured, reticulate, glabrous ; paratergites more coarsely punctured. Third tergite of male with broad emargination, on eighth tergite a central callosity, apical edge dentate ; seventh tergite with usual lateral furrows. Intermediate tibiae of legs rather spinose.

Length 7 mm.

Type ♂, NIGERIA : Ibadan, 1.v.56, at light (*J. L. Gregory*) in the author's collection ; paratypes, same data (*V. F. Eastop*) in collection of C. E. Tottenham.

18. *Zyras* (*Parophthalmonia*) *arrowi* Bernhauer

Bernhauer, 1936, *Novit. Zool.* **39** : 265.

Easily recognised by the coarse elongate granulation of the elytra and the dense shagrination of head, pronotum and elytra. From examination of specimens in the Rev. C. E, Tottenham's collection I am of the opinion that the granulation is given to some little variation. Setiferous craters only obscurely rimmed. Pronotum laterally strongly bevelled, not quite reaching the anterior corners (fig. 15).

The species appears to be well distributed.

Type ♂, ANGOLA : Luimbale Mt. Moco, 1800–1900 m. (*K. Jordan*) in the British Museum (Nat. Hist.). I have also seen specimens from CONGO BELGE :

Elisabethville (*H. Bomans*) (*Ch. Seydel*), Kafakumba (*F. G. Overlaet*) in the Musée Royal du Congo Belge; Elisabethville (*H. J. Brédo*) in the Institut Royal des Sciences Naturelles de Belgique; NIGERIA: Ibadan (*V. F. Eastop*), SOUTHERN RHODESIA: Salisbury (*S. Seagrief*) in the collection of the Rev. C. E. Tottenham; CONGO BELGE: Mpala, Katanga (*H. Bomans*) in my own collection.

19. *Zyras* (*Parophthalmonia*) *matengoensis* Bernhauer

Bernhauer, 1947, *Ann. naturh.* (*Mus.*) *Hofmus. Wien* **55**: 161.

Bernhauer draws attention to the pronotum which narrows posteriorly.

Elytra also granulate but much denser and finer than in *arrowi* Bernh. Setiferous craters large and distinctly rimmed; lateral margins of pronotum bevelled for fully three-quarters of their length (fig. 16). Eighth tergite bluntly dentate, 2 dorsal callosities present. Puncturation of elytra in female denser and less granulate. Median lobe figure 26.

Type ♂, TANGANYIKA: Matengo-Hochland Songea (Linda, 1300–1400 m.) (*Zerny*) in the Chicago Natural History Museum. Also from CONGO BELGE: Elisabethville (*Ch. Seydel*), Kasenga (*H. J. Brédo*), Kivu, Rwankwi (*J. V. Leroy*) in the Musée Royal du Congo Belge, two of these specimens labelled by Bernhauer "*kristenseni* var."; from Elisabethville and Musosa (*H. J. Brédo*) and TRANSVAAL: Shilouvane (Fauvel Coll.) in the Institut Royal des Sciences Naturelles de Belgique; from Nachingweg, ii–iii.1954, ♀♀ (*V. F. Eastop*) in the collection of the Rev. C. E. Tottenham.

20. **Zyras (Parophthalmonia) gregoryi** sp. n.

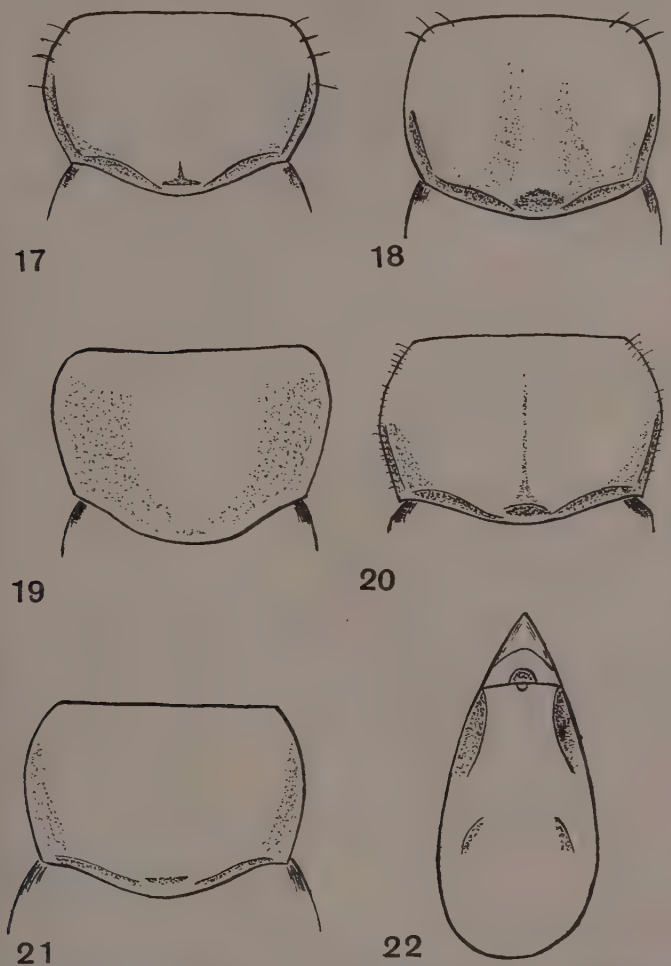
This new species is very similar in many respects to *uelensis* Bernh., but considerably larger. The males of both species have the pronotum inclined to be granularly punctured; the females are not granulate. In the key the former are placed at No. 21; the latter at No. 33. Although larger in all other details, the setiferous craters on the head are barely as large as those of *uelensis*, and not so distinctly rimmed. The pronotum is more densely punctured and granulate and the microsculpture is extremely weak; in *uelensis* it is finely but strongly reticulate; the puncturation of the elytra is a little coarser and slightly more shining, in *uelensis* there is a very obscure microsculpture. The general colour is rather lighter, especially the pronotum and elytra. There is a distinct difference in the shape of the median lobe of the aedeagus (fig. 23).

Chestnut brown, head and abdomen darker.

Head transverse (7·25 : 4), strongly punctured except on vertex where it is distinctly reticulate in the male, much less so in the female; a distinct elongate depression between craters in the male; this is much less evident, more shining, in the female. Puncturation in female rather denser, leaving only a narrow median band impunctate which has, however, a longitudinal depression for the anterior two-thirds.

Eyes large and very convex, their longitudinal diameter 3 times length of temples, which are sharply rounded and setose. Setiferous craters not strongly rimmed; a triangular callosity between base of antennae in both sexes. First segment of antennae broadened and deeply emarginate at apex; second and third segments of equal length, slightly shorter than first; fourth and fifth segments of equal length, about a quarter shorter

than the 2 preceding; segments 6–10 of equal length, slightly shorter than the 2 preceding; segment 11 equal to penultimate, bluntly acuminate with rather dense setae at apex; all segments much broader at apex, setose and with conspicuous larger setae at the apex;



FIGS. 17–22.—*Zyras* (*Parophthalmonia*). (17–21) Pronotum of (17) *semiopacus* Bernhauer, (18) *opacus* Bernhauer, (19) *bidenticulatus* Bernhauer, (20) *harpurus* sp. n., (21) *sobrinus* sp. n. (22) Median lobe of aedeagus of *acuticollis* Bernhauer.

first 3 segments more strongly setose. Maxillary palpi long, setose, of lighter colour, labrum with long fine setae.

Pronotum transverse (10 : 6·75), broader than head, in the male densely granularly punctured, the granulation most evident near transverse depression opposite scutellum, very obscure microsculpture; in the female the puncturation is asperate, the lateral margins

evenly rounded, posterior corners " toothed " ; anterior margin straight, posterior margin gently rounded and broadly bevelled, laterally bevelled for posterior two-thirds ; anterior corners with a few strong black erect setae ; lateral depressions broad but not deep ; a faint median line terminating in a broad shallow transverse depression opposite scutellum. All margins narrowly bordered. Elytra slightly transverse (10 : 9), coarsely, densely, asperately punctured ; setae golden, diffuse but conspicuous ; sinuate at postero-external angles ; posterior and sutural margins bordered ; scutellum slightly punctured.

Abdomen sparsely, weakly, punctured, with weak transverse microsculpture ; sparsely pubescent ; paratergites more strongly asperately punctured and setose ; seventh tergite with lateral furrows ; eighth tergite of male gently rounded, finely dentate with 2 lateral teeth, and a transverse row of 4 small setiferous tubercles and a slightly larger central callosity. Third tergite of male with 2 widely spaced blunt teeth from apical margin. Eighth tergite of female similar to that of male. Legs long, strongly setose.

Length 12–13 mm.

Type ♂, Nigeria : Ibadan, 1.v.56, at light (*J. L. Gregory*) ; paratypes same locality, 5.iii.53 (*J. L. Gregory*) in my collection. Paratypes also from same locality, v.56 (*V. F. Eastop*) in collection of Rev. C. E. Tottenham ; Congo Belge : " Kil. 300 de Kindu " ♂ (*Dr. Russo*) in the Musée Royal du Congo Belge ; and Kaswabilenga (700 m.), 3–4.xi.1947 (*Mission G. F. de Witte*) in the Institut des Parcs Nationaux du Congo Belge.

21. *Zyras* (*Parophthalmonia*) *uelensis* Bernhauer

Bernhauer, 1926, *Arch. Naturg.* **92** : 63.

This species is very similar to *gregoryi* sp. n. and I have indicated the differences in the description of this species above.

Male with large setiferous craters which are distinctly rimmed. Posterior and lateral margins of pronotum bevelled, the latter for the posterior two-thirds. As also in *gregoryi*, the male has the pronotum granularly punctured. Median lobe of aedeagus figure 25.

Type ♀, Congo Belge : Haut-Uele, Watsa, 1922 (*R. Burgeon*) in the Musée Royal du Congo Belge. Nigeria : Ibadan, iv–v.1956 (*V. F. Eastop*) in the collection of Rev. C. E. Tottenham.

22. *Zyras* (*Parophthalmonia*) *semiopacus* Bernhauer

Bernhauer, 1926, *Arch. Naturg.* **92** : 62.

Identified by the densely granular pronotum and even more densely granular elytra ; pronotum also strongly shagreened ; the lateral depressions extremely shallow and the margins narrowly bevelled for three-quarters of their length (fig. 17).

Type ♀, Congo Belge : Haut-Uele, Watsa, 1922 (*L. Burgeon*) ; N. Lac Kivu, Rwankwi, vi.1951 (*J. V. Leroy*) ; Yangambi, 2.v.1940 (*R. R. P. P. Raignier and Van Boven*) in the Musée Royal du Congo Belge. Nigeria : Ibadan, 5.iii.1953 (*J. L. Gregory*) in my own collection.

23. *Zyras* (*Parophthalmonia*) *opacus* Bernhauer

Bernhauer, 1937*a*, *Ann. Mag. nat. Hist.* (10) **20** : 311.

A distinct species in many respects.

Black except legs and antennae ; very short transverse segmented antennae, setiferous craters large and distinctly rimmed, eyes only slightly convex ; pronotum convex, broadest at anterior third ; elytra only as long as pronotum ; head, pronotum and elytra strongly finely reticulate. Pronotum with 2 elongate depressions which are more thickly punctured leaving a central impunctate band (fig. 18). Whole insect rather parallel in form.

Type ♂, KENYA : Ngong, iv.1936 (*A. F. J. Gedye*) in the British Museum (Nat. Hist.) ; Muguga, in the collection of Rev. C. E. Tottenham.

24. **Zyras (Parophthalmonia) infulatus** sp. n.

This pretty species has the pronotum shaped rather like *matengoensis* Bernh., but the lateral depressions are much weaker and not inclined to be reflexed ; the reticulation is a little finer than that of *opacus* Bernh. The colour of the type form, however, makes it distinctive although this also varies.

Head black, antennae dark except first 2 segments, pronotum black with anterior, posterior and lateral borders reddish-yellow ; this varies considerably in extent, but lateral colouring usually broader than that of anterior or posterior margins. Elytra reddish-yellow with a triangular black patch extending from shoulder to sutural angle, the black sometimes extending until only base of elytra is red. Tergites usually darkened.

Head transverse (4·5 : 2·25), distinctly finely reticulate, punctured towards the eyes which are moderately convex and their longitudinal diameter equal to the temples. In the male the head is depressed ; setiferous craters small and rimmed. First 2 segments of antennae reddish-yellow, others almost black ; first segment much broadened and deeply emarginate at apex ; second segment half length of first ; third longer than second but not equal to first ; segments 4–10 equal in length, perhaps 9 and 10 fractionally shorter than others, last segment half as long again as tenth, gradually acuminate. All segments broader at apex, setose especially at apical edges.

Pronotum transverse (3 : 2), sparingly punctured, strongly finely reticulate, lateral depressions weak, with 2 shallow central depressions which do not extend to anterior margin ; a deep transverse depression opposite scutellum. Lateral margins rounded more to posterior margin with posterior corners finely toothed ; posterior margin broadly, lateral margins narrowly bevelled, not reaching anterior corners, a few erect setae at anterior corners.

Elytra transverse (6 : 5·5) at shoulders, (8 : 5·5) at posterior margin, asperately punctured, strongly reticulate, setae short ; postero-external corners sinuate, sutural and posterior margins narrowly bordered. Abdomen sparsely very finely and asperately punctured, microsculpture very obscure, glabrous. Paratergites strongly setose. Legs setose especially anterior and intermediate tibiae.

Length 6 mm.

Type ♂, ABYSSINIA : Bogos, no further data ; paratype ♀, same locality (Fauvel Collection) in the Institut Royal des Sciences Naturelles de Belgique. Paratypes also from CONGO BELGE : Kanyabayongo 1760 m. (Kabasha), 7.ix.1934 (*G. F. de Witte*) in the Institut des Parcs Nationaux du Congo Belge.

25. *Zyras* (*Parophthalmonia*) *infulatus* var. **uniformis** var. nov.

I have given this name to a specimen having the head, pronotum and abdomen (except last tergite) black.

Type ♂, CONGO BELGE : Ruanda, Lac Mugesera, viii.1954 (*N. Leleup*).

26. **Zyras (Parophthalmonia) impurus** sp. n.

Of about the same size as *infulatus* sp. n. but quite distinct by the shape of the pronotum, which has only a slight lateral depression, the sparse puncturation of the elytra, and the shining, glabrous, impunctate abdomen. The reticulation of the pronotum is like *opacus* Bernh., and there are two very shallow and indistinct median depressions which are punctured, leaving an ill-defined impunctate central band.

Head black, pronotum reddish-brown, a little lighter at lateral margins, elytra reddish-brown, darker at lateral and sutural margins, abdomen brownish-black, paratergites lighter, legs reddish-yellow.

Head transverse (4·75 : 2·25), setiferous craters small and not rimmed, shining and without microsculpture on vertex and between craters, reticulate and diffusely punctured towards inner margins of eyes which are large and convex and 3 times the length of the temples. Antennae short, first segment broadened and deeply emarginate at apex, second two-thirds length of first, third segment slightly shorter than second, segments 4–10 transverse, much broader at apex, last segment a little longer and narrower than penultimate, bluntly acuminate ; all segments with setae from apical edges ; maxillary palpi setose, clypeus with fine long setae.

Pronotum transverse (3 : 2) convex, with lateral depressions very weak, hardly discernible, lateral margins rounded, broadest below middle, narrowly bevelled for posterior two-thirds, posterior margin gently rounded, posterior corners minutely toothed ; 2 very shallow and indistinct median depressions which are sparingly punctate, leaving an ill-defined impunctate band ; sparingly punctured laterally, with very short setae, reticulation distinct ; all margins narrowly bordered ; a transverse depression present opposite scutellum.

Elytra moderately transverse (6 : 5), rather parallel, distinctly reticulate but not quite so fine as pronotum, sparingly punctured, setae short. Postero-external corners strongly sinuate, suture and posterior margins bordered ; scutellum not punctured.

Abdomen shining, glabrous, impunctate, narrowing to apex. Male with apical margin of third tergite forming two well spaced triangular teeth, the paratergite also prolonged into a sharp tooth ; fifth tergite with a callosity projecting towards the head, the callosity strongly depressed in the centre, forming 2 erect lamina ; seventh tergite with usual lateral furrows and 2 close teeth ; eighth tergite also with lateral furrows and 2 blunt teeth near apical margin, which is emarginate and dentate. Legs setose and moderately slender.

Length 7 mm.

Type ♂, Congo Belge : Lusinga (1760 m.), 28.xi.1947 (*Mission G. F. de Witte*) in the Institut des Parcs Nationaux du Congo Belge.

27. *Zyras* (*Paropthalmonia*) *gestroianus* Bernhauer and Scheerpeltz

(*gestroi* Bernhauer, 1927, *Mem. Soc. ent. Ital.* **6** : 199.)
gestroianus Bernhauer and Scheerpeltz, 1934, *in* Junk, *Col. Cat.* **130** : 1654.

Bernhauer states that this species is exactly like *kristenseni* Bernh. in colour, and rather like it in all other respects although only half its size, but I think this is rather misleading.

Setiferous craters on head well rimmed ; lateral margins of pronotum very narrowly and indistinctly bevelled.

Type ♂, Portuguese Guinea : Boloma, vi–xii.1899 (*L. Fea*) in the Chicago Natural History Museum. Nigeria : Ibadan, 19.v.56, ♂♂ (*J. L. Gregory*) in my collection.

28. *Zyras* (*Parophthalmonia*) *punctiventris* Bernhauer

Bernhauer, 1915, *Ann. hist.-nat. Mus. hung.* **13** : 172.

Male with well rimmed setiferous craters which are only fractionally more than their diameter apart ; third tergite broadly emarginate with a small central tooth ; an elongate central keel present on fourth, fifth and seventh tergites ; apical margin of eighth tergite bluntly dentate.

Paratype ♀, Tanganyika : Dar-es-Salaam (*Methner*) ; paratype ♂ Uganda : West Nile, ix.1928 (*Marshall*) in the Chicago Natural History Museum. French Guinea : Kindia, iv.1954 (*A. Villiers*) in the Institut Français D'Afrique Noire, Dakar. Congo Belge : Haut-Uele, Yebo, xi.1926, ♀ (*L. Burgeon*), and Elisabethville, ii.1940, ♂ (*H. J. Brédo*) in the Musée Royal du Congo Belge.

29. *Zyras* (*Parophthalmonia*) *zernyi* Bernhauer

Bernhauer, 1947, *Ann. naturh.* (*Mus.*) *Hofmus. Wien* **55** : 160.

Male with setiferous craters rimmed, twice their diameter apart. Pronotum flatter transverse (6 : 4) with lateral margins not so rounded, anterior and posterior corners more distinct, latter minutely toothed, extremely finely punctured and reticulate. Elytra strongly reticulate, dull. Tergites with distinct transverse reticulation ; eighth tergite irregularly dentate on apical margin. Bernhauer, in his description, mentions secondary male characters on the third tergite but I cannot see any such on the type.

Type ♂, Tanganyika : Matengo-Hochland, Lupembe-Bg 1800–2000 m., 11–20.i.1936 (*Zerny*) in the Chicago Natural History Museum. Tanganyika : Iwawa, 15 miles NW. Muaketi, 7000 feet, 24.i.52, ♂ (*W. Peters*) in my own collection.

30. *Zyras* (*Parophthalmonia*) *dentiventris* Bernhauer

Bernhauer, 1927, *Mem. Soc. ent. Ital.* **6** : 197.

Type ♀ and paratypes ♂ and ♀, Portuguese Guinea : Boloma, vi–xii.1899 (*L. Fea*) in the Chicago Natural History Museum. There is also a paratype ♂ in the Cameron Collection at the British Museum (Nat. Hist.). Bernhauer writes " so far the smallest species of the subgenus known to me ".

The four foregoing species are perhaps the smallest of the subgenus and they all bear some close resemblance to each other. The following comparative differences may help in identification.

gestroianus : pronotum, flatter, broader, bevelling of lateral margins hardly visible (6 : 3·5) shining, posterior corners not toothed ; tergites distinctly transversely reticulate.

punctiventris : pronotum more convex, bevelling of lateral margins narrowly distinct (5·5 : 3·5), duller ; posterior corners minutely " toothed ", more densely punctured ; puncturation of elytra similar in both species, finely reticulate, shining.

zernyi : tergites indistinctly reticulate ; pronotum with lateral margins not so rounded, anterior and posterior corners more distinct (6 : 4) ; elytra strongly reticulate, dull ; tergites more distinctly transversely reticulate.

dentiventris : smaller than *zernyi* ; parallel, bevelling of lateral margins narrower (5 : 3·5) ; elytra indistinctly reticulate, more shining ; apical margins of tergites densely fringed with setae, especially third ; fourth and fifth tergites very shining, puncturation inclined to granular, especially in male.

31. *Zyras* (*Parophthalmonia*) *bidenticulatus* Bernhauer

Bernhauer, 1926, *Arch. Naturg.* **92** : 60.

This species resembles those in the first section of the Key in having the yellow colour of pronotum and elytra, the latter being identical in microsculpture, puncturation and pubescence with *burgeoni* Bernh., but although the posterior corners are not toothed, they are nevertheless obtusely angled, which character places the species in the larger second section of the Key.

Pronotum (fig. 19) quite distinctive, widest before the middle, not laterally bevelled but broadly depressed, the central area forming a large cushion, posterior margin very weakly sinuate near the corners ; setiferous craters rather small and not distinctly rimmed, separated by about 3 times their diameter ; puncturation of elytra inclined to granular. Third tergite of male with 2 widely separated teeth on apical margin ; eighth tergite with a small central callosity and a number of granules ; the apical edge denticulate.

Type ♂, E. Africa : Trockenvald, Mtotchovu (*Methner*) ; Congo Belge : Ruanda, Gabiru, 20.x.1932, ♂ (*L. Burgeon*) bearing a Bernhauer label " *kristenseni* var." in the Chicago Natural History Museum.

32. **Zyras (Parophthalmonia) elgonensis** sp. n.

The shape of the pronotum is similar to that of *matengoensis* Bernh., but this and the elytra are not granulate as in that species ; the pronotum shows reticulation and two central depressions similar to that of *opacus* Bernh.

Reddish-yellow, head and elytra darker.

Head transverse (5·5 : 2·75) ; finely reticulate, sparingly punctured near the eyes, craters distinctly rimmed, slightly more than their diameter apart, eyes convex, their longitudinal diameter twice the length of temples, well developed protuberance between base of antennae ; labrum with long setae. Segment 1 of antennae broadened and emarginate at apex, second segment half length of first, third two-thirds length of first, segments 4–10 half length of third, last segment narrower than but equal to penultimate, all finely setose, but with longer setae at apical edge of each, laterally compressed and broader at apex.

Pronotum transverse (7·5 : 5·75), broadest a little before middle, laterally broadly depressed and narrowly bevelled, with 2 central depressions which do not reach the anterior margin but which are distinctly punctured, diffusely punctured elsewhere, a deep transverse depression before scutellum ; posterior corners with minute tooth ; anterior corners distinct with a few erect black setae.

Elytra transverse (8 : 7·25) at shoulders, (9·5 : 7·25) at posterior margin ; densely shallowly punctured, distinctly reticulate, shining, with distinct yellow setae ; posteroexternal angles feebly sinuate, margins narrowly bordered.

Abdomen shining, impunctate except for some very minute punctures, transversely alutaceous, glabrous ; third tergite of male with 3 very shallow arcs, the central one with a small tubercle ; fourth tergite with a small apical tubercle ; apical edges of tergites 5–7 also with small setiferous tubercles ; seventh with usual lateral furrows, eighth with apical edge very bluntly dentate, with a central dorsal callosity. Legs setose.

Length 9 mm.

Type ♂, Kenya : " Elgon, Vers Est." (2500 m.) in humus, 4.xii.1953 (*N. Leleup*) in the Musée Royal du Congo Belge.

33. **Zyras (Parophthalmonia) harpurus** sp. n.

In shape the pronotum is similar to that of *semiopacus* Bernh., but it is not granular (fig. 20); the puncturation of the elytra is similar to that of *matengoensis* Bernh., but denser, being about as dense as in *uelensis* Bernh., though finer.

Of rather slender build, pronotum and elytra parallel. Dark brown, pronotum lighter laterally, elytra lighter along sutural and posterior margins and apex of tergites, the eighth completely lighter; head black.

Head transverse (5 : 2·5), distinctly reticulate, sparingly punctured towards eyes which are convex with their longitudinal diameter twice length of temples which themselves are setose. Setiferous craters distinctly rimmed, separated by just fractionally more than their diameter. First segment of antennae broadened and deeply emarginate at apex; second two-thirds length of first; third only fractionally longer than second; segments 4–7 equal, two-thirds length of third; 8–10 a little shorter than 7; last segment a half longer than penultimate; setose, broadened at apex.

Pronotum transverse (7 : 5), convex, distinctly reticulate, finely, sparingly but rather regularly punctured, broadly but very shallowly depressed on disc, with clear indication of a median depression, a narrow transverse depression opposite scutellum, lateral depressions weak, narrowly bevelled for half the length, lateral margins not strongly rounded, broadest slightly before middle; with rather long, yellow, suberect setae visible mostly near lateral margins. Posterior corners sharply acute with minute tooth; anterior corners with erect curled black setae and with rather shorter ones along lateral margins; all margins narrowly bordered.

Elytra transverse (7 : 6), rather parallel, densely asperately punctured, narrow interstices with faint microsculpture, with rather long setae; scutellum slightly punctured, reticulate. Postero-external angles strongly sinuate, margins narrowly bordered.

Abdomen of male almost glabrous, shining, very finely and very diffusely punctured, closer on apical margins of tergites. Third tergite rather deeply emarginate with 2 lateral lamellae and a central blunt tooth, fourth and fifth tergites each with a central dorsal tooth, seventh tergite with usual lateral furrows and a larger central tooth, eighth with apical edge narrowly arcuate and finely denticulate with deep lateral furrows and sharp lateral teeth; 3 dorsal teeth present; the central one much larger. Legs long, setose, posterior tibiae laterally compressed.

Length 10 mm. Median lobe figure 24.

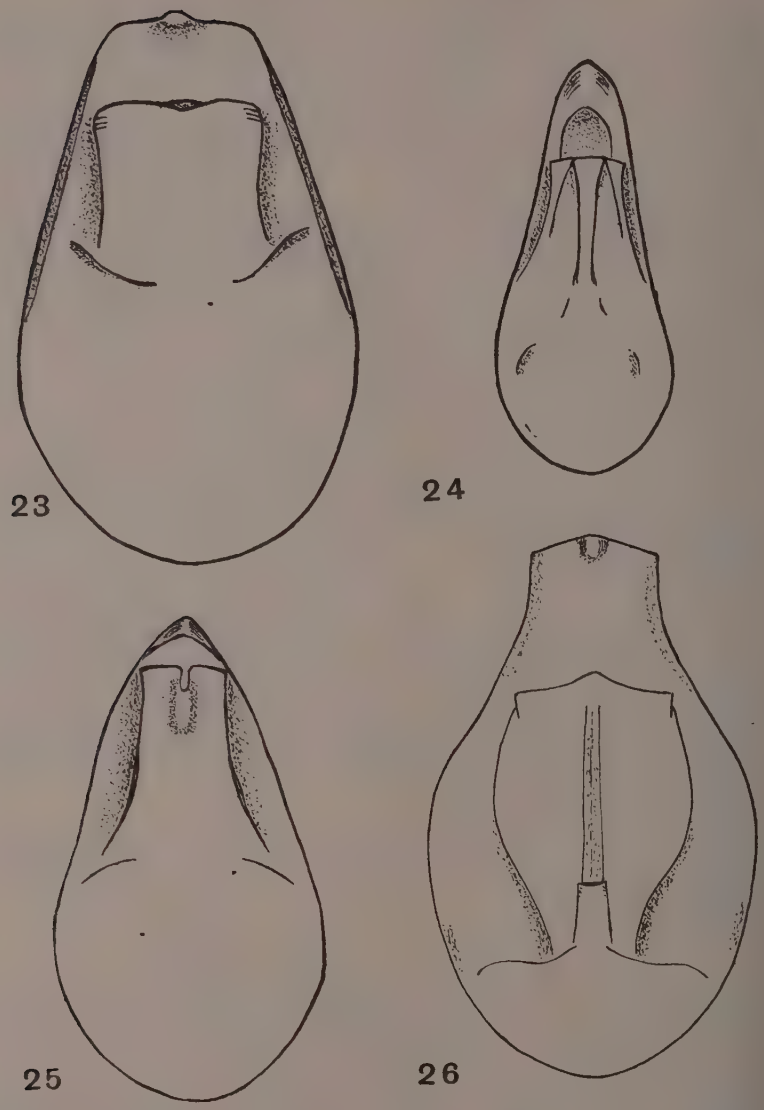
Type ♂, NIGERIA: Ibadan iv–v.1956 (*V. F. Eastop*) in the collection of the Rev. C. E. Tottenham.

34. **Zyras (Parophthalmonia) ingratus** sp. n.

This species is very similar to *kristenseni* Bernh. and could easily be mistaken for it. It will be necessary only to detail the differences.

Head and pronotum more convex and less strongly and more finely punctured; microsculpture of pronotum inclined to be longitudinally reticulate on disc of female; the elytra much more finely punctured; abdomen almost glabrous and except for a few apical granules the puncturation is extremely sparse and very fine and shallow, microsculpture reticulate.

Type ♀, ABYSSINIA: Ulchite, Addis Ababa (*Prof. Giaquinto*); paratype ♂, same data, in the collection of Sig. M. Cerruti of Rome.



FIGS. 23–26.—*Zyras* (*Parophthalmonia*). Median lobe of aedeagi of (23) *gregoryi* sp. n. (24) *harpurus* sp. n., (25) *uelensis* Bernhauer, (26) *matengoensis* Bernhauer.

35. **Zyras (Parophthalmonia) boormani** sp. n.

This species can be compared with *gestroianus* Bernh., but is larger. The puncturation of the elytra is similar, the tergites are finely punctured throughout but denser than in *gestroianus*, the pronotum is more strongly reticulate and the puncturation very much finer ; the antennae are also longer and more evidently setose ; the head is more strongly punctured and reticulate.

Reddish-yellow, head black, abdomen darkened.

Head transverse (5 : 3), strongly reticulate, rather strongly punctured towards the eyes, craters distinctly rimmed, twice their diameter apart, head protruding between base of antennae ; eyes convex, their longitudinal diameter twice length of temples ; antennae rather long, the first segment strongly broadened and strongly emarginate at apex, second two-thirds length of first, third fractionally longer than second, segments 4–7 slightly shorter than second, segments 8–10 fractionally shorter than previous 4, last segment almost equal to 2 penultimate, rather finely acuminate and setose at apex, segments much wider at apex, each with very conspicuous black setae ; labrum with 4 short black setae.

Pronotum transverse (7·5 : 5), evenly rounded, broadest at middle, finely but distinctly reticulate, very diffusely and shallowly punctured ; lateral depressions very shallow, reaching only half the length of lateral margins and these only very narrowly bevelled ; slightly depressed on disc, a median depressed line which is more distinct posteriorly ; a small transverse depression opposite scutellum ; short, black, almost equidistant erect setae along lateral margins ; all margins bordered.

Elytra transverse (7 : 6), densely asperately punctured, reticulate microsculpture, with fine short pubescence ; postero-external angles feebly sinuate, posterior and sutural margins bordered, scutellum reticulate.

Abdomen uniformly and finely asperately punctured, with fine short pubescence, each tergite with a few granules on apical edge. Third tergite of male extremely feebly arcuate ; seventh tergite with lateral furrows, eighth furrowed, apical edge arcuate and finely denticulate, 2 lateral larger teeth. Legs long setose, posterior tibiae laterally compressed.

Length 7 mm.

Type ♂, NIGERIA : Lagos, iv.1957, at light (*J. Boorman*) ; paratype ♂ Ibadan, 1.v.1956, at light (*J. L. Gregory*) in my collection.

36. *Zyras* (*Parophthalmonia*) *kristenseni* Bernhauer

Bernhauer, 1915, *Ann. hist.-nat. Mus. hung.* **13** : 173.

Bernhauer compares this species with *punctiventris* Bernh., but it is so unlike it in almost every detail that such comparison would tend to be misleading. He gives no further description.

Reddish-brown, head black or dark.

Head transverse (2 : 1), longitudinally reticulate, impunctate on vertex, sparsely punctured near the eyes ; triangularly projected between basal segments of antennae ; eyes large convex, their longitudinal diameter twice the length of temples. Male with large "craters" which are rimmed (I have seen one specimen where they coalesce). First segment of antennae broadened and strongly emarginate at apex ; second segment half length of first ; third a little longer than second, but shorter than first ; segment 4 two-thirds length of third ; segments 5–10 of equal length, fractionally shorter than 4, last segment slightly longer than penultimate.

Pronotum transverse (7 : 5), moderately rounded, laterally distinctly bevelled for nearly the whole length, posterior margin broadly bevelled ; reticulate microsculpture, evenly and moderately densely punctured, but interstices much broader than diameter of punctures; with rather distinct golden setae ; lateral depressions moderately broad but not deep, not reaching to anterior corners ; a deep transverse depression opposite scutellum, all margins

narrowly bordered; posterior corners distinct, very finely "toothed" especially in male.

Elytra slightly transverse (7·75 : 7) at shoulders, (9 : 7) at posterior margin; more densely punctured than pronotum, inclined to asperate, more so in the male, setae suberect; postero-external angles distinctly sinuate; posterior and sutural margins bordered.

Abdomen sparingly punctured with rather long pubescence. Males with third tergite broadly emarginate and with a lateral double blunted tooth (I have seen one male with this tergite entire); eighth tergite in both sexes finely denticulate, in the male with a sharp lateral tooth and a central callosity which itself is variously depressed and edged with a few setiferous granules.

The species varies in colour from dull yellow to dark reddish-brown, the pronotum and elytra being mostly darker. It appears to be widely distributed.

First recorded from ABYSSINIA: Dire Daoua (*Kristensen*); cotype ♀, ERITREA, Ghinda (*J. Bang-Haas*); PORTUGUESE GUINEA: Bolama, vi–xii.1899 (*L. Fea*); CONGO BELGE: "Kil. 245 de Kindu", 6.iii.1911 (*L. Burgeon*); NYASALAND: Mlanje, 18.iii.1913 (*S. A. Neave*), Kwakiyembe, v.1916 (*Methner*); all in the Chicago Natural History Museum. MOZAMBIQUE: Zambesi, Caia, 1.ii.1911 (*H. Swale*); ZULULAND: Nagana, 1922 (*H. H. Curson*); SIERRA LEONE: "58–116"; KENYA: Nairobi, ii.24 (*Dr. van Someren*); GOLD COAST: Accra, 29.vi.26 (*A. W. J. Pomeroy*) in the British Museum (Nat. Hist.). CONGO BELGE: Elisabethville (*H. J. Brédo*) in the Institut Royal des Sciences Naturelles de Belgique and Mai Ya Moto (V. Rutsh.) 1934 (*G. F. de Witte*) in the Institut des Parcs Nationaux du Congo Belge. NIGERIA: Ibadan, 1952–53–56 (*J. L. Gregory* and *V. F. Eastop*) in the collection of the Rev. C. E. Tottenham and in my own; ERITREA: Ducambia, in the collection of Sig. M. Cerruti of Rome. In his descriptions Bernhauer has compared six species with *kristenseni*. Some of these bear very little resemblance and are apt to be misleading; certain other species here described as new bear Bernhauer labels "*kristenseni* var."

37. *Zyras* (*Parophthalmonia*) *donisthorpei* Cameron.

Cameron, 1919, *Ent. Rec.* **31** : 85.

I have only seen the male type specimen. It looks rather like a large immature *kristenseni* with which it agrees in all respects except the abdomen, which is almost impunctate and glabrous.

NW. RHODESIA: Kashitu (*H. C. Dollman*) in the British Museum (Nat. Hist.).

38. **Zyras (Parophthalmonia) sobrinus** sp. n.

This species bears some resemblance to *kristenseni* Bernh., but differs as follows.

Short suberect setae present on elytra and pronotum, which is especially noticeable on the lateral depressions of the pronotum; puncturation also coarser and denser. Pronotum (fig. 21) with lateral margins not bevelled and the microsculpture much finer and less distinct; abdomen more strongly punctured.

The new species bears some similarity to *bidens* Cam., but pronotum laterally not so rounded and posterior corners much more acute. Dull yellow except head which is black.

Length 7 mm.

Type ♀, TRANSVAAL: 3.i.21 (*Dr. Brauns*) in the British Museum (Nat. Hist.).

39. **Zyras (Parophthalmonia) concisus** sp. n.

Very similar in stature to *boormani* sp. n. but the head is larger, red in colour (it is black in *boormani* sp. n.) and longitudinally alutaceous on the vertex (in *boormani* it is strongly and finely reticulate). The lateral depressions of the pronotum are more distinct and the lateral margins more broadly bevelled ; the puncturation of the elytra is a little coarser and the abdomen is not so finely and densely punctured.

Reddish-yellow, head and tergites 5 and 6 a little darker.

Head transverse (5·75 : 3), longitudinally alutaceous, sparingly punctured near the eyes, setiferous craters small, not rimmed, situated well apart ; eyes convex, their longitudinal diameter twice the length of the temples. First segment of antennae widened and deeply emarginate at apex, second segment half length of first, third segment two-thirds length of first, fourth as long as second, segments 5–10 a little shorter, last segment a little longer than penultimate ; all segments setose, much broadened at apex.

Pronotum transverse (7·25 : 5), in the male finely reticulate, diffusely punctured, very sparingly granular ; in the female distinctly longitudinally alutaceous and more diffusely punctured, more shining. Lateral depressions broad, shallow but distinct ; lateral margins evenly rounded, broadest just before the middle ; posterior margin more broadly bevelled. In the male broadly depressed, deeper opposite scutellum, evidence of a median depressed line for posterior half. Posterior corners obtuse but without teeth.

Elytra transverse (7 : 6), a little broader at posterior margin, not densely punctured, interstices broader than punctures and indistinctly reticulate ; posterior and sutural margins bordered, postero-external angles moderately sinuate, with short sparing pubescence.

Abdomen finely punctured, denser in male, transversely reticulate. Male with apical margin of third tergite arcuate with a lateral tooth on either side, a small central dorsal tubercle on fourth tergite ; fifth and sixth tergites broadly depressed ; seventh and eighth with lateral furrows, apical edge of eighth tergite finely but sharply denticulate, a lateral tooth on either side, and a central dorsal tubercle. Female with apical margin of eighth tergite much less distinctly denticulate and lateral teeth smaller. Legs with tibiae strongly setose.

Length 8 mm.

Type ♂, PORTUGUESE GUINEA : Bolama, vi–xii.1899 (*L. Fea*) in the Chicago Natural History Museum ; paratype ♀, NIGERIA : Ibadan, 1.v.56 (*J. L. Gregory*) in my own collection.

40. **Zyras (Parophthalmonia) icetus** sp. n.

Of a narrower build than *concisus* sp. n.; the head is smaller and black, the antennae shorter, and the pronotum not laterally bevelled ; the puncturation of the elytra is very similar.

Reddish-yellow, head black.

Head transverse (5·5 : 2·5), longitudinally alutaceous, dull, very sparingly punctured near the eyes which are convex, their longitudinal diameter 4 times length of temples. Antennae short ; first segment broadened and emarginate at apex, second segment half length of first, third a little shorter than second, segments 4–10 transverse, much broadened at apex, last segment narrower and a little longer than penultimate, all segments finely setose.

Pronotum transverse (7 : 4), microsculpture reticulate, rather confused, sparingly and finely punctured, and pubescent ; laterally not very rounded, rather straight, broadest at

middle; not bevelled, broadly but shallowly depressed, a small transverse impression opposite scutellum; all margins finely bordered.

Elytra transverse (6·5 : 5·5) at shoulders, (8 : 5·5) at posterior margin; moderately punctured, interstices indistinctly alutaceous, shining, with fine short pubescence; postero-external angles feebly sinuate; posterior and sutural margins bordered.

Abdomen diffusely punctured, rather more closely at base of third to fifth tergites, sixth and seventh tergites almost impunctate, with a few apical granules; third tergite of female very feebly arcuate, lateral furrows on seventh tergite weak; eighth tergite irregularly and bluntly denticulate, with lateral furrows and blunt teeth. Legs finely setose.

Length 8 mm.

Type ♀, NIGERIA: Zaria, 1932, in the collection of the Rev. C. E. Tottenham.

V. SUMMARY

A brief historical resumé is given of the taxonomic status of the subgenus *Parophthalmonia* Bernhauer of the Staphylinid genus *Zyras* Stephens. A key is given to the 40 species of the subgenus known from Africa, 18 of which are described as new after examination of types and paratypes of all the species. Notes of occurrence and details of the collections in which they are to be found are given for all the specimens cited.

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